Researchers working within the UG framework also differ in their hypotheses about how formal instruction or the availability of feedback on their learning will affect learners' knowledge of the second language. Bonnie Schwartz (1993), for example, concludes that such instruction and feedback change only the superficial appearance of language performance and do not really affect the underlying systematic knowledge of the new language. Rather, language acquisition is based on the availability of natural language in the learner's environment. Lydia White (1991) and others who think that the nature of UG is altered by the acquisition of the first language suggest that second language learners may sometimes need explicit information about what is not grammatical in the second language. Otherwise, they may assume that some structures of the first language have equivalents in the second language when, in fact, they do not. We will see some examples of language structures that are influenced by the learner's first language in Chapter 4 and some studies related to the effect of instruction and feedback in Chapter 6.

Researchers who study second language acquisition from a UG perspective are usually interested in the language competence of advanced learners—their complex knowledge of grammar—rather than in the simple language of beginning learners. They are interested in whether the competence that underlies the PERFORMANCE or use of the second language resembles the competence underlying the language performance of native speakers. Thus, their investigations often involve GRAMMATICALITY JUDGEMENTS or other methods to probe what learners know about the language rather than observations of speaking. By using such methods, they hope to gain insight into what learners actually know about the language rather than how they happen to use it in a given situation.

Second language applications: Krashen's 'monitor model'

One model of second language acquisition that was influenced by Chomsky's theory of first language acquisition was Stephen Krashen's (1982) Monitor Model. He first described this model in the early 1970s, at a time when there was growing dissatisfaction with language teaching methods based on behaviourism. Krashen described his model in terms of five hypotheses.

First, in the *acquisition–learning hypothesis*, Krashen contrasts these two terms. We 'acquire' as we are exposed to samples of the second language we understand in much the same way that children pick up their first language—with no conscious attention to language form. We 'learn' on the other hand through conscious attention to form and rule learning.

Next, according to the *monitor hypothesis*, the acquired system initiates a speaker's utterances and is responsible for spontaneous language use. The learned system acts as an editor or 'monitor', making minor changes and polishing what the acquired system has produced. Such monitoring takes place only when the speaker/writer has plenty of time, is concerned about producing correct language, and has learned the relevant rules.

The *natural order hypothesis* was based on the finding that, as in first language acquisition, second language acquisition unfolds in predictable sequences. The language features that are easiest to state (and thus to learn) are not necessarily the first to be acquired. For example, the rule for adding an *-s* to third person singular verbs in the present tense is easy to state, but even some advanced second language speakers fail to apply it in spontaneous conversation (see Chapter 4).

The *input hypothesis* is that acquisition occurs when one is exposed to language that is comprehensible and that contains i + 1. The 'i' represents the level of language already acquired, and the '+1' is a metaphor for language (words, grammatical forms, aspects of pronunciation) that is just a step beyond that level.

The fact that some people who are exposed to large quantities of comprehensible input do not necessarily acquire a language successfully is accounted for by Krashen's *affective filter hypothesis*. The 'affective filter' is a metaphorical barrier that prevents learners from acquiring language even when appropriate input is available. 'Affect' refers to feelings, motives, needs, attitudes, and emotional states. A learner who is tense, anxious, or bored may 'filter out' input, making it unavailable for acquisition.

Both psychologists and linguists challenged Krashen's model. Linguist Lydia White (1987) questioned one of his hypotheses in a paper called 'Against Comprehensible Input'. Psychologist Barry McLaughlin's 1978 article was one of the first to raise the question of whether the five hypotheses could be tested by empirical research. For example, distinguishing between 'acquired' and 'learned' knowledge can lead to circular definitions (if it's acquired, it's fluent; if it's fluent, it's acquired) and to a reliance on intuition rather than observable differences in behaviour.

In spite of lively criticism and debate, Krashen's ideas were very influential during a period when second language teaching was in transition from approaches that emphasized learning rules or memorizing dialogues to approaches that emphasized using language with a focus on meaning. Since then, COMMUNICATIVE LANGUAGE TEACHING, including IMMERSION and CONTENT-BASED INSTRUCTION, has been widely implemented, and Krashen's ideas have been a source of ideas for research in second language acquisition. Classroom research has confirmed that students can make a great deal of progress through exposure to comprehensible input without direct instruction. Studies have also shown, however, that students may reach a point from which they fail to make further progress on some features of the second language unless they also have access to guided instruction (see Chapter 6). Some insights from learning theories developed in psychology help to explain why this may be so.

Current psychological theories: The cognitivist/developmental perspective

Since the 1990s, psychological theories have become increasingly central to research in second language development. Some of these theories use the computer as a metaphor for the mind, comparing language acquisition to the capacities of computers for storing, integrating, and retrieving information. Some draw on neurobiology, seeking to relate observed behaviour as directly as possible to brain activity.

As in first language acquisition, cognitive and developmental psychologists argue that there is no need to hypothesize that humans have a language-specific module in the brain or that 'acquisition' and 'learning' are distinct mental processes. In their view, general theories of learning can account for the gradual development of complex syntax and for learners' inability to spontaneously use everything they know about a language at a given time. As noted above, some linguists have also concluded that, while UG provides a plausible explanation for first language acquisition, something else is required for second language acquisition since it so often falls short of full success.